

ABSTRACT

A method for enhancing vision of an eye includes a laser delivery system having a laser beam for ablating corneal material from the cornea of the eye. Measurements are made to determine an optical path difference between a plane wave and a wavefront emanating from the retina of the eye for a location at a surface of the cornea. An optical correction is provided to the laser delivery system for the location based on the optical path difference and refractive indices of media through which the wavefront passes. The optical correction includes dividing the optical path difference by a difference between an index of refraction of corneal material and an index of refraction of air. The laser beam is directed to the location on the surface of the cornea and corneal material ablated at the location in response to the optical correction to cause the wavefront to approximate the shape of the plane wave at that location.